

NOVEMBER/DECEMBER 2025

**23UBT11 — CELL AND MOLECULAR
DEVELOPMENTAL BIOLOGY**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define cell.
2. List the features of plant cells.
3. List any two functions of the nucleus.
4. Draw the structure of a mitochondria and label its parts.
5. Define methylation.
6. What is splicing?
7. Define S phase.
8. Identify the gap function.
9. Define oogenesis.
10. List out the different germ layers.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Outline the structure of prokaryotic cell.

Or

- (b) Differentiate plant cell and animal cell.

12. (a) Discuss about the functions of Golgi bodies.

Or

- (b) Explain the structure of the lysosome. Highlight on its functions.

13. (a) List out any five differences between DNA and RNA.

Or

- (b) Discuss about 5'-capping mechanism in mRNA.

14. (a) List the check points of the cell cycle.

Or

- (b) Explain about tight junctions.

15. (a) Write a note on gastrulation process.

Or

- (b) Discuss about the key aspects of organogenesis.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain with a neat diagram the structure and components of a eukaryotic cell.

17. Discuss about the cytoskeleton, its types, and functions.

18. Write a detailed note on the mechanism of DNA replication in prokaryotes.

19. Discuss about the key differences between mitosis and meiosis.

20. Describe in detail about the mechanism of spermatogenesis.

